

3-D Wind and Turbulence Measurement System for UAV, Phase I

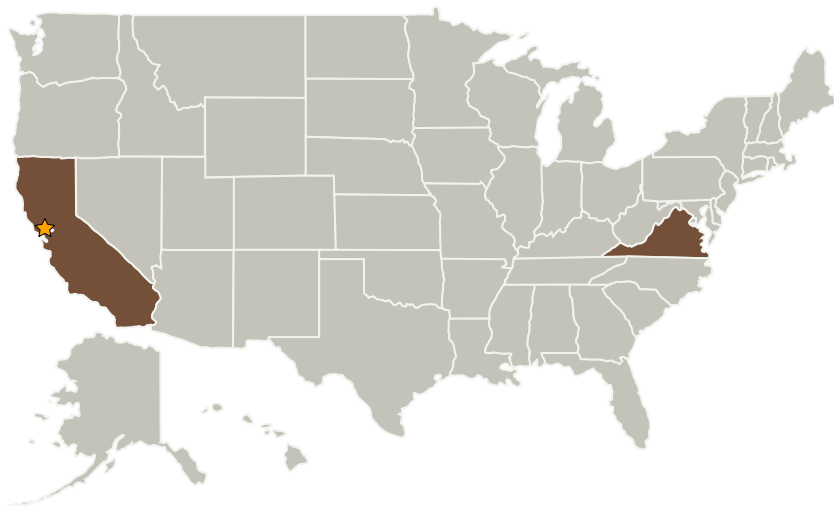
Completed Technology Project (2008 - 2008)



Project Introduction

In situ wind and turbulence measurements play a key role in the support and validation of Earth science missions using spaced-based technology. NASA has been using Unmanned Aerial Vehicles (UAVs) in support of these Earth science missions, but the current UAVs do not have sensor packages to make science quality measurements of parameters including three-dimensional wind, turbulence, temperature, humidity, and pressure. AeroTech will develop 3-Dimensional Wind and Turbulence Measurement System for UAVs that is based on thermal anemometer technology and that will measure and resolve science quality wind vector and turbulence information throughout the flight envelope. The System will provide high quality data that will improve NASA's ability to validate, verify, and supplement spaced-based measurements taken during missions. Phase I will assess the capability of the thermal anemometer sensor portion of the system and finalize the system design. By the end of Phase II, the prototype system will have been developed, integrated into a UAV, and flight-tested.

Primary U.S. Work Locations and Key Partners



3-D Wind and Turbulence Measurement System for UAV, Phase I

Table of Contents

Project Introduction	1
Primary U.S. Work Locations and Key Partners	1
Organizational Responsibility	1
Project Management	2
Technology Areas	2

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Ames Research Center (ARC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

3-D Wind and Turbulence Measurement System for UAV, Phase I



Completed Technology Project (2008 - 2008)

Organizations Performing Work	Role	Type	Location
★ Ames Research Center(ARC)	Lead Organization	NASA Center	Moffett Field, California
Aerotech Research	Supporting Organization	Industry	Newport News, Virginia

Primary U.S. Work Locations

California	Virginia
------------	----------

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Robert W Wheeler

Technology Areas

Primary:

- TX14 Thermal Management Systems
 - └ TX14.1 Cryogenic Systems
 - └ TX14.1.3 Thermal Conditioning for Sensors, Instruments, and High Efficiency Electric Motors